

NEWSNOTES

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NEWSNOTES



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N.O.A.H. News

As we all start to head back into the house for what promises to result in a very large case of 'cabin fever' in the next few months, it seems only natural that we return to that comfortable chair in front of the computer to try and finish off a few things we started during summer and never got around to finishing for reasons such as... too hot... time to cut the grass again... paint the gutters... etc, etc, etc... I finally had time to put all the upgrades I had received over the summer into the hard drive. This took a while but the rewards were great. PageStream's newest is a definite winner as was MVG's new scanner modules and program updates. These two alone kept me busy for a number of days. If you are an owner of either of these and were wondering if you should update, the general opinion around town is 'DO IT'.

Our user group is not only growing in members lately but more and more of you are writing for the Newsletter and wanting the meetings to resume as soon as possible. We hope to have everything up to speed again ASAP. We were hit with a couple of cancellations due to some really strange circumstances. Joey G. has recovered fully and the plans for a MIDI meeting are pressing ahead once again.

In this month's issue we have some really great articles from Kevin Steele, Rick Gridley and others. Publishing Pointers by Kevin once again attempting to give guidance to those of us lost somewhere in the scroll bars of the desktop. A review on both EDHACK 2.2 and MULTIDESK DELUXE are coming next month.

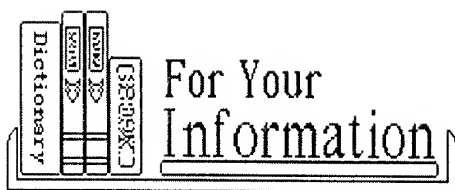
One more thing before I sign off. Reprinted here in the Newsletter is a form letter I hope you will sign and send off, who's purpose it is to get Word Perfect updated for the ST platform. It's already addressed and written in very simplistic but firm language and my hope is that if enough of us get together and send this in we may get results not only on this case but we just might start a steamroller headed in the direction of those companies who are just sitting there with the opinion that WE don't care! Till Next Time,
Doug

PS: Clarence T. Chang's article was a last minute addition but worth the re-print to get it into this issue. Any and all feedback will be welcome by both Clarence and this editorial staff.

The Future Of Computer Gaming

by

Rick Gridley



Things they are a chinging in the computer gaming field. As development costs rise we are seeing some players drop out of the game and others concentrate on the huge user base of the MS-DOS computers. Others think the future is in the gaming consoles such as the SEGA GENESIS and the NINTENDO SUPER SYSTEM.

What has become clear is that we are seeing very little development on the ST or AMIGA. Most games are being written for the MS-DOS platforms with AMIGA/ST ports coming six months or a year later. What little development we do see on the ST is coming from Europe and even that is changing.

Development costs for '*cutting edge*' games are running in the \$750,000.00 range and some even more. Ultima VII from ORIGIN SYSTEMS has a rumored development cost of \$2,000,000.00. What that means is at \$59.95 retail, a game must sell a minimum of 40,000 copies for a software house just to break even and ORIGIN SYSTEMS will need upwards of 100,000 units sold of ULTIMA VII just to cover it's developmental costs. (Now if you have seen any demos or read about ULTIMA VII you will understand what went into this game. It sets new standards of both sound and graphics.) At these sales figure numbers a lot of gaming software companies are losing money on a lot of their products and some have slowed down or are close to getting out of the field altogether. With these sales figures needed just to break even, I think you can see why we are seeing very little in original games for the ST. Most products are ports of the MS-DOS versions. MICROPROSE is bringing many of their fine titles to the ST but most, excluding MIDWINTER II, (review in August Newsletter), are ports of titles that have enjoyed some success in the MS-DOS market and these ports are being done in Europe where the ST has a much stronger market.

Things are starting to change in the MS-DOS world as well. As the games become more sophisticated, faster processors are needed and a lot of the newer cutting edge DOS games need 386's running at 25 mhz or better along with SUPER VGA cards and SOUNDBLASTER cards to run in their full splendor. Not many people can justify the costs of \$2500 - \$3000 to play games. If one needs that much computer for other functions then one is fortunate. I don't. My ST handles all my word processing, spreadsheets, (cont. pg. 6)

Chicago Computerfest by **ATARI®**

Ramada Hotel O'Hare

Rosemont, Illinois

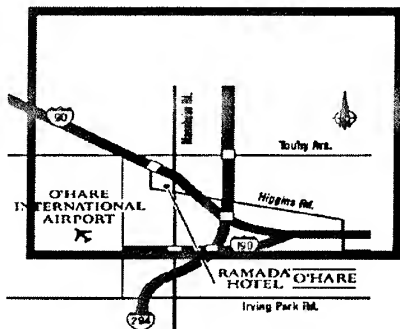
November 23rd and 24th

Show Hours: 10am to 5pm

Atari is sponsoring it's first show in the United States! This is the show we have all been waiting for. Come see the newest products available for the LYNX and the ST/ TT lines of computers. Plus many more exciting events!!

- | | |
|-----------------------|-------------------------------|
| * Major Developers | * Door prizes |
| * Vendors/Dealers | * Game Contests (ST & LYNX) |
| * General Seminars | * Banquet |
| * Over 28,000 sq. ft. | * Desktop Publishing Seminars |
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ADMISSION: \$6.00 Adults at door
(\$5.00 advance tickets through User Groups)
Children under six FREE with paid adult admission



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(cont. from pg. 4)

DTP and telecommunications just fine. In fact, the game WING COMMANDER 2 is getting complaints that it runs too slow on a 25 mhz 386 and ORIGIN is stating that a 486 is needed to run that game at it's best. It's a never ending hole to drop money into trying to keep up.

What this is starting to translate into is as the games become more sophisticated, fancier hardware is needed and the software house are facing a smaller user base as they require higher end machines to handle the games. ELECTRONIC ARTS is viewing the future of the game consoles and have released many of their titles for the SEGA GENESIS, including all thier sports titles along with MIGHT & MAGIC, CENTURION, KINGS BOUNTY, STARLIGHT and THE IMMORTAL. They are in the process of writing a flight simulator called F-26 just for the SEGA GENESIS and will port many of their titles to the new SUPER NINTENDO ENTERTAINMENT SYSTEM as well. The old ST favorite DUNGEONMASTER is coming for the SNES as well and SIM CITY is out for the SNES.

While CD-ROM games have been promised for computers for a few years, we are seeing very few titles on that format for the computers. There have been a lot of complaints about slow access times on CD-ROMS. SEGA has introduced in Japan (spring in the USA) their CD-ROM drive for the GENESIS game console. There are already a half dozen titles available for it and another 12 to 15 expected by spring including SIM EARTH and a wargame that's bigger, faster and better looking than any computer wargame I have seen. SEGA claims their CD-ROM is faster than any computer CD-ROM and the stats on the unit confirms this. Their CD-ROM unit has it's own 68000 processor on board to speed access times and the unit contains custom graphic chips to handle rotation, scaling and zooming. With the 68000 chip in the GENESIS to give speeds of 20 mhz or more.

This is where the future of video gaming lies. These console units are custom made to handle graphic and sound information at high scale speeds and all at prices that are attractive. Both the GENESIS and it's CD-ROM unit should go for around \$500 retail, that's for BOTH units. You may now understand why Atari is pushing ahead with development of the JAGUAR. This unit promises to be a 64bit RISC game console with a list price of under \$300! You can also see why the software houses are changing their opinions of the consoles. The consoles now have the power to run the most sophisticated computer games and at their low retail price the user base tends to be much much larger than the computer user base for games.

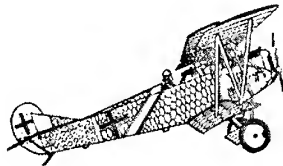
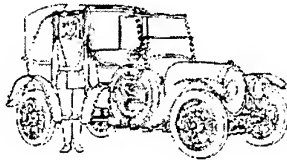
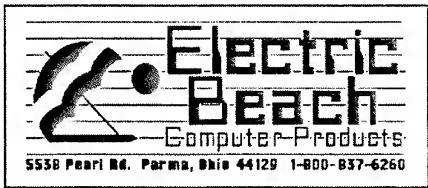
What this means to you the ST user is if your computer is handling your everyday functions and the appeal to high end MS-DOS units is to

run advanced computer games, then save your money and stick with your ST. Buy one of the game consoles, be it GENISIS, SNES, T16 or JAGUAR. You will save a lot of money and end up a lot happier in the long run.

Later,

Rick Gridley

3 NEW Clip Art Disks from



Coloring Books 5, 6 & 7..... \$12.95 each

Publishing Pointers: Working with Graphics



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In past columns, I've discussed the uses of fonts, how to place text on a page, even the proper methods of emphasizing text. However, I haven't mentioned the "second half of desktop publishing, namely, graphics.

To start off, let me define what "graphics are basically, anything on your page that isn't text, such as pictures, column rules, and other page elements. Actually, some text may even be considered graphics, such as corporate logos. So, it looks like the word "graphics covers quite a lot of territory!

The amount of graphics you'll need for any particular project depends heavily on the project. An advertisement listing the supermarket's weekly specials will need a graphic for each and every item. If you are planning on publishing a novel or manual, you may not need any graphics at all.

So, where do you get these graphics? If all you need is some generalpurpose graphics, a clipart collection is handy. You can usually buy collections by theme, allowing you to buy a clipart disk for holidays, one for special occasions (birthdays and such), and one for businessrelated work (business people shaking hands and so on...). If you've got a modem, you can also tap into a lot of public domain clip art. Be warned, however, that the quality can range from absolutely spectacular to prekindergartenquality.

The first problem you'll run across is the vast number of different graphics formats that clipart can come in. Before you buy anything, check to see which format your desktop publishing program supports. If you buy a clipart disk in PCX format, you'd better be sure your program supports that format!


There are two main types of formats, bitmapped and objectoriented. Bitmapped graphics are made up of a number of dots, while objectoriented graphics are made up of a series of computer instructions such as "draw one circle, then put a black box next to it, then.... Bitmapped graphics usually have a much more natural look to them, while the objectoriented graphics are usually "cleaner and can be resized without distortion, printing at the highest resolution your printer can handle. Each type has its place in your desktop publishing plans, so you should be familiar with both types.

One area where you'll always be using bitmapped graphics is

scanned images. Having access to a scanner can be invaluable if you are going to be doing a lot of desktop publishing. It is a lot easier to scan in a picture of a new product than it is to try and use a graphics program to design a handmade imitation graphic, especially if your graphic skills are like mine! Scanned images can be difficult to place in documents, simply because resizing them can lead to all sorts of unpleasant distortions and patterns, called a Moire effect. This is that strange "checkerboard effect" that happens when you shrink a bitmapped graphic that contains fill patterns. The best solution for scanned images is to set the scanner for the final print resolution and scantofit. This is not always an easy thing to accomplish.

Personally, I prefer to use objectoriented graphics everywhere I possibly can in place of bitmapped. Objectoriented formats (like GEM and EPS) look much smoother when printed, avoiding that 'dotty' look. Of course, this is just a personal preference. Desktop publishing still has a lot of the artist's profession left in it your documents are going to be an expression of your own personality, much like a writer's stories reflect his personality.

One final warning with graphics don't go overboard! One or two graphics a page should be enough, except in the case of a publication like a catalog or print ad. Even then, you should limit yourself lots of little pictures have less impact than a few big ones. The final decision on using graphics involves setting up a "graphic style" for a document and then sticking to it. If you're creating a stylish document, a few abstract lines and geometric figures would suit. You wouldn't want to throw in a funny caricature however, as it spoils the "mood of the piece. In the end, common sense and a good eye can help a great deal in the judicious use of graphics.

**STEELE**
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Hello,

If you are a current owner of the Atari version of WordPerfect and would like to see an upgrade please take the time to fill out the following form letter and send it to Word Perfect Corporation. The address is provided, but you'll have to transfer it to an envelope. If enough of us lobby the Atari section leader maybe, just maybe she'll authorize the completion of Wordperfect 5.0 for us and we can collectively breathe a sigh of relief. Make copies, collect'em and trade'em with your friends! The point is, if enough of us invest 29 cents, we could become an important force for beneficial change. Imperious Rex! Good luck and God's speed.

HELP !!

Ms. Liz Tanner
Wordperfect Corp.
1555 North Technology Way
Orem, Utah 84057

Dear Ms. Tanner:

It is my understanding that your corporation has abandoned further pursuit of releasing Version 5.0 for Atari ST's. It is my belief that if you were to release a version with graphics integration capabilities, it would be extremely well received. I believe that the lack of graphics support has caused a good number of Atari ST users to use alternative word processors in the meantime with marginal results. A new version which included graphics support would be reason enough for myself and others to pay for the upgrade in advance of the release date. Do not be taken by surprise by this suggestion. It has become common practice in the ST community for users to pay in advance of release for updates. Please contact, by phone or mail, a representative sample of your registered Atari ST users and see if what I say isn't true. I'm sure you'll be surprised at the results. I would like to specifically request of you, to finish and release Version 5.0 for Atari ST's.

Sincerely,

(Your Name)

Furnished by N.O.A.H.

The Mac/ST Connection: System 7 and the ST

This year saw the birth of a dramatic new version of the Mac operating system, one that offers a lot of neat new features. Before I get too deep into the mechanics of System 7 for the Macintosh, however, let me first put up one warning—as of right now, System 7 does not work with the Spectre GCR Mac emulator. Dave Small is working on the problem, and (as always) he should be able to tweak the emulator into cooperating with this impressive new operating system. In the meantime, let me whet your appetite concerning this new system.

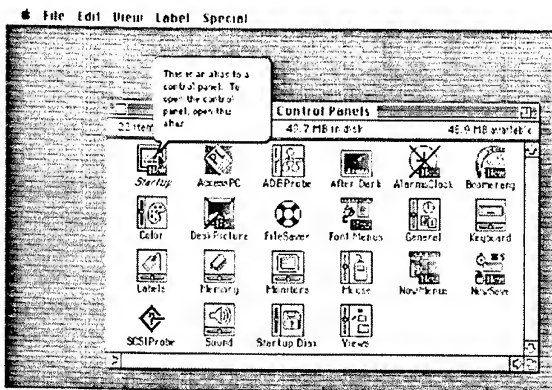
There have been some fundamental changes in the philosophy of programs and desk accessories. Under earlier systems, they were two separate entities. Now, desk accessories are treated like programs. At first glance, this would seem to be a problem, since you couldn't load a desk accessory while running another program. However, System 7 has permanent multitasking built in, and therefore you can load programs and DA's at any time, even while another program is running.

Which brings up the flipside to this programDA thing—programs can be used like DA's now. The Apple menu can now hold programs, DA's and even files and folders. Not a bad trick. With the new Apple menu, you can click on a file listed, autoloading the program that created that file. And, you can do this while you're online, in your word processor, or whatever. Very, very convenient.

There are a lot of features hidden away, like publish and subscribe, which allows you (for example) to create a graphic and "publish it. If you import a published graphic into your desktop publishing program, and then change the original graphic in your graphics program, the changes will be reflected in your desktop publishing document. Once again, a very handy feature. However, this one requires programs to be updated to take advantage of it.

Another feature that needs an updated program is balloon help. When balloon help is turned on, you can point at almost anything on the screen and a little cartoonlike speech balloon appears, explaining what that feature does. This is nice for new programs, or for those features you rarely use in a program.

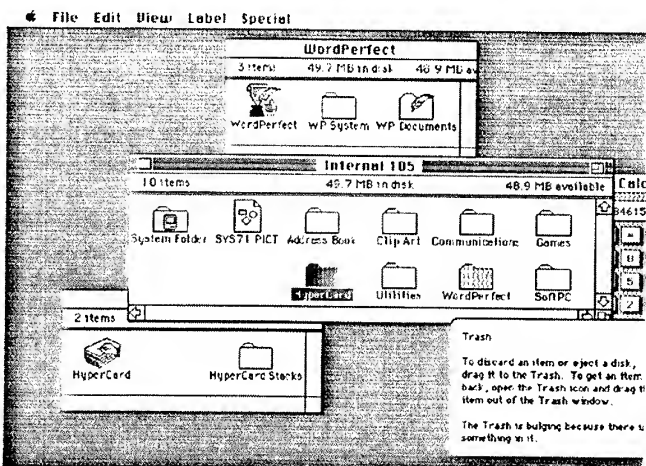
One more feature is apple events, which will allow programs to borrow features from each other to accomplish needed tasks. For example, if you need to type some text into your DTP program, it could



call your word processor's text entry module to do this. This promises to end program "featuritis", where your word processor does spreadsheets, your spreadsheet does desktop publishing, and your desktop publisher does graphics. Instead, you buy one program for each of these tasks, and the other programs

can call upon that program as needed. You get to build a monster "everything program out of your favorite applications.

There is a lot more, but unfortunately some features (like virtual memory) require advanced hardware, that the Spectre GCR cannot imitate. It's a shame too, as being able to



access the free space on your hard drive as RAM is a great thing. However, there is enough features that the GCR should be able to access to justify getting System 7 when the GCR can support it. Getting multitasking on an ST is reason enough, but there are a lot of other nice additions in System 7 that make it an operating system of choice for WIMP (WindowIconMousePointer) enthusiasts. A lot of companies are still updating their programs to take advantage of all System 7 has to offer, so don't worry about the delay in getting GCR compatability Dave Small may be saving you a lot of money in software upgrade fees!

Atari TT In The Workplace

by: Clarence T. Chang

Recently, I was in a meeting with a group of people at NASA Lewis. Someone asked me what kind of computer I am using in my office. I told them an Atari TT. Some of them didn't know that Atari makes real computers. But in general, the reaction is "You use a what?" "Does it have a joystick?" So, just to maintain the reputation, I took a joystick into the office so that my TT is now video-game capable. I have to warn you, though, do not play Time Bandits with a TT. You won't live too long.

Let's see, there are some disclaimers that I have to make first... Oh, yeah. What I tell you is not classified material and it is not an endorsement of a product. This is a simple reply to many a question directed to me as a user of the Atari TT computer in my office and laboratory. Enough said.

First let me tell you my background. I work for NASA Lewis Research Center in Cleveland, Ohio. My specialty is in the reacting physics of combustion process. Basically, I am a pyromaniac. When I was young, my mother forbid me to play with matches. I rebelled. I build combustion experiments, and measure the phenomena using laser-optics tools. The data gathered by such tools are acquired and stored in my computers. Then, I look at the data and try to make some physical sense out of them. If I am successful, I will write a paper and present the results in a professional conference or journal.

Are you yawning yet?

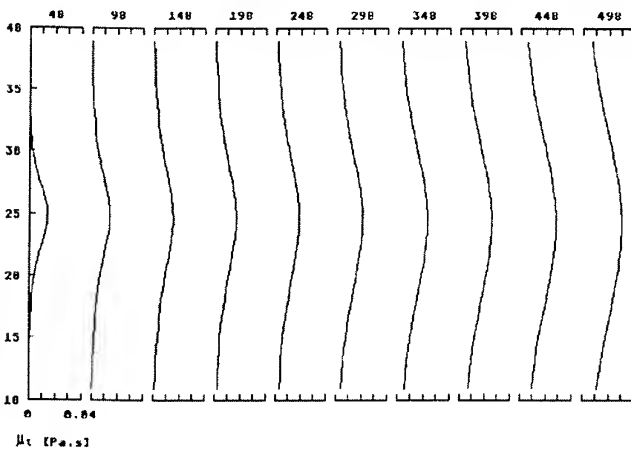
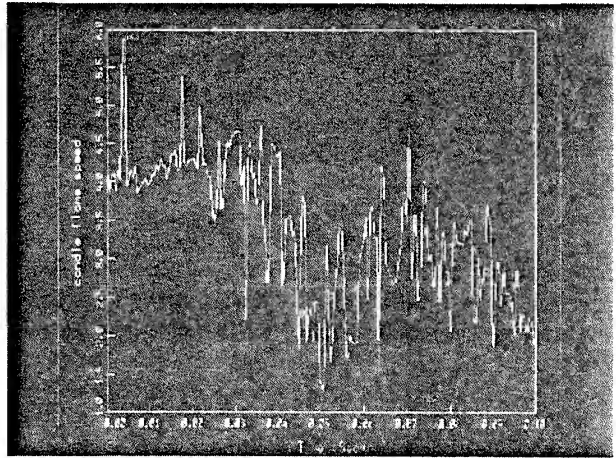
Presently, I have two projects. My TT is participating in both. In the first, we are collecting data on the behavior of a high-speed planar shear layer formed from parallel flowing hydrogen and hot air streams. (A shear layer is a most fundamental fluid flow phenomenon that occurs in nature and in combustors.) Just think of it as the high-performance combustor in a transatmospheric hypersonic aircraft that burns hydrogen with incoming hot rammed air. This data is to be used to benchmark computational fluid dynamics (CFD) codes that model the actual physical process as well as providing us with understanding on how fuel and oxidizer mixes in a shear layer.

I measure and map the flow speeds inside this shear layer with a laser-doppler velocimeter. The process is similar to the microwave radar

that the Smoky uses on the highway, only the spacial resolution is much better. With a microwave radar, we can resolve things down to a few cm. With the visible laser, we can take things down to about 25 micron.

I use a 5 W argon ion laser as the coherent light source. (It's real bright, about 3000 time brighter than the sun if you are careless enough to look into the bore when it's lasing.) The multiline (multicolored) beam is color separated first. I use the 514.5 nm green and the 488.0 nm blue beams. Then, each color beam is passed through a beam splitter to form 2 parallel beams. When the beams pass through a transmission lens, they are focused down on a single spot the shape of a football. What happens at that location is that effectively a fringe pattern (alternate dark and bright regions evenly spaced) exists inside the volume of that football.

By clever arrangements, we can orient the blue and green fringes perpendicular to each other to measure flow speeds in different directions. When a small dust particle in the airstream passes through that volume, it scatters light, and this light is collected and focused down into a photomultiplier



tube to be electronically amplified. We seed the air flows with bottled New Jersey smog. Just kidding.

The most valuable part of this amplified signal from the photomultiplier tube is that it pulses at a rate linearly related

to the speed at which the scattering particle is moving. Since the fringe width is defined by the optics arrangement, we can convert the frequency information directly to flow speed using either a digital clock counter or an analog FM demodulator. The demodulated signal, which is proportional to the flow speed, is then fed into a high-speed digitizer to be collected by a mini-computer with 2 GB of disk memory. I can do that with my TT as well via the VME bus A/D interface, but it's easier to go the other way, for now.

My TT is then used to look at the raw signals for patterns that are not obvious using common statistical analysis. Once that pattern is identified, I write the algorithm to process the entire pack of data collected during that day (~100 MB).

The old saying that a picture is worth a thousand words is very true, especially in research. Often, I would process the raw data on our super-mini since it has better canned softwares to do the traditional statistical analysis. Then I tell the super-mini to plot the result. All of this is done from the TT using it as a remote terminal. This is done over the network with a terminal emulator. I normally use a p/d package for my ST from Switzerland by a chap named Simon Poole. It will emulate a VT240 as well as a Tek401x terminal automatically. When the graph is plotted, I capture the screen and have it edited using DEGAS Elite before it is imported into PageStream. I'm attaching a few of the graphs that I have for you to get an idea what it's like.

My other project is much more interesting. It is a carry over from my doctoral study at MIT. What I'm interested is the relationship between flame propagation speed and the local fluid strain rate inside the bounds of a flame thickness. This is usually about 1 mm thick. (What? You guys haven't learned the metric system?) What I do is set up a small methane/air flame similar to what you have on your stove. Then, I shine a laser through the flame to measure the gas speed at every instant for the duration of the experiment.

Simultaneously, I shine a second laser through the same location to illuminate the particles that I have seeded in the combustion mixture. What we see then is that the part of the cold unburned gas is very bright, and the hot burned gas is dimmer because fewer particles are in the same gas volume due to thermal expansion. In between, inside the flame itself, the light intensity is varied, depending on the local gas temperature. This region is imaged on a linear CCD array in an electronic camera much like your video camcorder (except it's much more expensive). The signal is digitized by a frame grabber board controlled by my TT via its VME bus, and stored away along with the flow speeds. From the scattered light distribution, I can infer gas temperature distribution as well as the location, motion, and the instantaneous thickness of the flame front. The

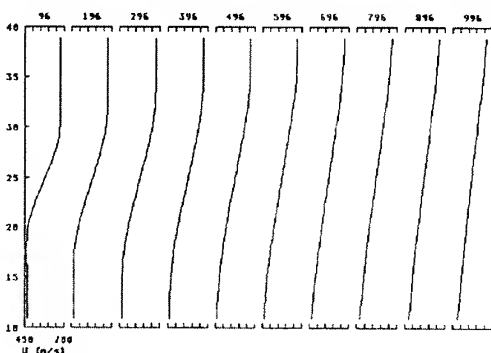
whole experiment would last perhaps several hours, but the single block of 26 MB of data is collected in about 20 seconds.

Okay, what's the deal with the TT anyway? Well, the advantage is in the bus speed. The video camera and frame grabber board is taking in about 1.3 MB/s of data. A PC's bus won't cut it realistically, despite what the theoretical bandwidth is available. It has to do with the control electronics. Both the NuBus, EISA, and MCA architectures can, but those machines are expensive. The TT's VME bus will handle this. The data is buffered in the 16 MB of TT RAM temporarily until it can be flushed onto the system's harddisk.

Non of this comes in a ready-made form, of course. That's what happens when you step into untouched territory. (The only other similar systems existing are based on MicroVax's, typically costing more than \$100 k.) The controlling codes are developed locally. The core of the code is supplied by the board manufacturer. I then write the host system specific commands that tells the board to gate the camera, digitize, and transfer the data. This is done between 5000 to 10000 times a second. Sounds complicated? Not really. You see, I use GFA BASIC v.3.6 for the TT. It's almost idiot proof. Sure the supplied source code is in C (which I hate with a passion), but GFA recognizes them and compile accordingly.

Why not just program in C directly and compile it? Well... it's kind of like a horror story. I once tried to program in C on our Super-mini and was really frustrated because nothing worked. Then, a colleague of mine noticed that I was playing with file pointers and changing them creatively. Since I was running real-time data acquisition processes, I had very high file access priorities. I could have trashed our whole file system, all 2 GB of it, had my program worked. Needless to say, my application for superuser was denied.

Working with the TT and GFA makes things very easy. GFA is very non-cryptic. Everything is very obvious. And if I make a mistake, it tells me right away. I don't have to compile and find out my syntax error. And speed-wise, it's not any slower than C-coded programs. It's really a macro-assembler with a BASIC interface. In fact, I would say that's one of the main reason for staying with the ST/TT line of computers. Attached are also some plot files that were drawn using GFA BASIC after



analysis on the TT. The raw data files were CFD simulation results from our Cray YM/P computer.

Once I have the data, I need to look at them. Now, since the imaging data is stored in the TT's disk, it is most convenient to process them with GFA on the TT. I develop criteria for conditional sampling and processing, and then write the actual algorithm to process the 20 MB or so of data collected in that run.

The human mind is an amazing thing. It can pick out patterns that a computer cannot. Where no canned analysis algorithms and graphics software is available, I write the graphics routine myself. This is where the TT's graphics programming capability shines. It's really easy to use. And if I messed up, just stop it and edit. The machine-programmer interaction loop is very tight. This is a very desirable feature for research analysis. I normally store my pictures in DEGAS format or GEM .IMG format. If the situation warrens it, however, I also store the image in GEM metafile format.

The last step is report preparation. I write my reports using one of the wordprocessors such as WordUp, or 1stWord Plus. Sure, I can use Word Perfect, but it's not WYSIWYG, and I'm spoiled. The document is spell checked and imported into PageStream and printed out on a HP DeskJet Plus. Alternately, it can also go to a color postscript printer over the network. Good propaganda requires good hardware support.

By now, you should be very curious as to what hardware I have on hand. I have one of the first production TTs in the Cleveland area and definitely the first in NASA Lewis. It runs on a MC68030-32 CPU, with a MC68882-32 co-processor. The system contains 4 MB ST RAM, 16 MB TT RAM, a fast 110 MB harddrive, and a color monitor. A Rhothron VME-bus repeater/ adapter allows me access to an external a 6 U VME cage with power supply and a frame grabber board along with any other VME-bus peripherals.

On my acquisition agenda is a Rhothron Ethernet board and TCP/IP and NFS software from Germany to allow me high speed data transfers from the other networked computers. Also, I'm going to need a SCSI tape backup unit as well as another huge harddisk. We'll see what next year's budget can do, hmmm...

Biographical information

Clarence T. Chang was a former escaped graduate slave from the dungeons of MIT. He went in as a grease-monkey and came out a Dr. Strangelove-in-training. He now lives in North Olmsted.

November

N.O.A.H.

N.O.A.H.

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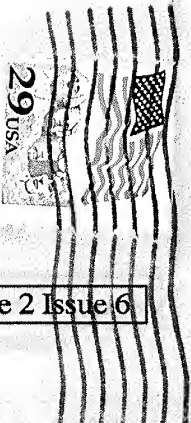
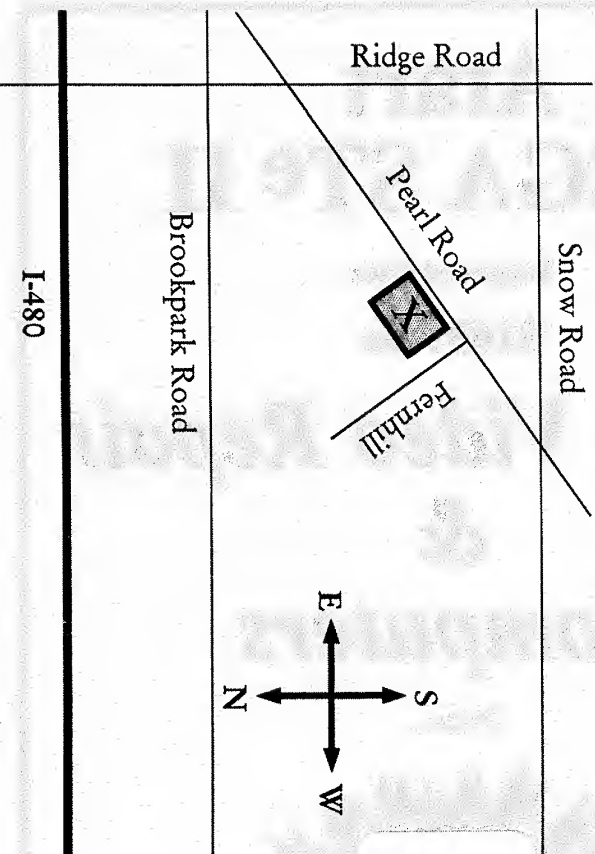
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